

A REVERSION IN *POLYMNIA CANADENSIS*
(COMPOSITAE) AND NOTES ON THE
PEDICELLATE DISK FLORETS IN THE GENUS¹

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While examining a folder of *Polymnia* in our herbarium, I came upon an unusual form of *P. canadensis* L. The specimen is from Polk County, Arkansas (*J. T. Buchholz 245*) and a notation on the label reads "infected with galls." I examined the specimen in detail and found that, while there was evidence in several of the heads of worm damage, the odd appearance of the specimen was due to what has been called a reversion (return to an ancestral condition) of the type exemplified in *Hypochoeris radicata* (Collins, 1921) and, to a lesser extent, in *Taraxacum officinale* (Smith, 1965).

Figure 1 is a diagrammatic comparison of a normal and a reverted disk floret of *Polymnia canadensis*. The reverted florets are characterized by a long pedicel tipped by a somewhat shortened but normally colored corolla, normal (apparently fertile) anthers, and a sterile secondary pedicel (in place of the normally sterile pistil) which bears a pair of bracts and a terminal fascicle of bracts. In the axils of the bracts in the fascicle, secondary reverted florets were developing, producing compound umbels in the most developed ones. Heads on the specimen did not set fruit. The ray florets (normally fertile) in the reverted heads developed in a manner similar to that of the disk florets, but the corolla in these was greenish and somewhat spathe-like (as in *T. officinale*; Smith, 1965). The phyllaries and receptacular chaff in the reverted heads were normal. In some of the less developed disk florets, the secondary pedicel ended at the pair of bracts.

I noticed, when comparing the normal and the reverted florets, that even the normal disk florets of *Polymnia canadensis* have short (ca. 1-3 mm) pedicels, a character to my

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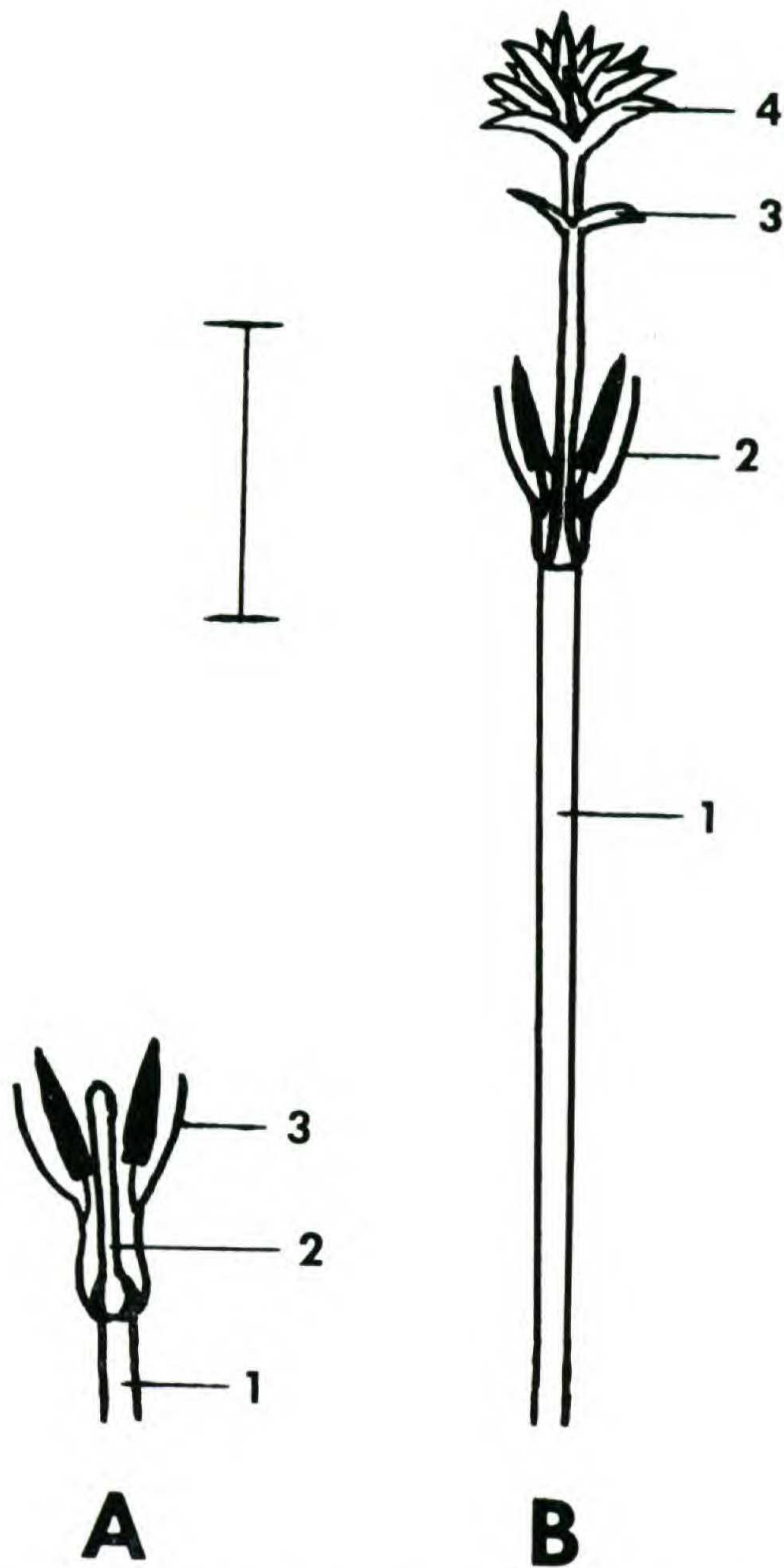


Fig. 1. Diagrammatic longitudinal section of a normal and a reverted disk floret of *Polymnia canadensis* L. Reference line about 5 mm. Anthers are shown in solid black. A. Normal floret: 1 = short pedicel; 2 = sterile pistil with undivided stigma; 3 = whitish corolla. B. Reverted floret: 1 = greatly elongated pedicel; 2 = whitish corolla; 3 = pair of bracts; 4 = fascicle of bracts.

knowledge quite rare in the Compositae. Examination of several specimens of *P. uvedalia* L. disclosed the fact that its disk florets are also normally pedicellate.

I am writing this note for two reasons: firstly, to add *Polymnia canadensis* to the list of species known to exhibit reversion. The close correlation between the morphology of the reverted heads of it and *H. radicata* (Collins, 1921) is striking. Secondly, to point out that the genus *Polymnia* (or, at least *P. canadensis* and *P. uvedalia*) is characterized in the *normal* condition by pedicellate disk florets. This second reason has further significance in two respects.

It would seem worthwhile to include in the description of the genus *Polymnia* in our state and regional floras, the fact that the disk florets are pedicellate. This character alone, I believe, would distinguish the genus from all other Compositae in our area. None of the manuals of use in this area mentions the character (Steyermark, 1963; Fernald, 1950; Gleason, 1963; Small, 1933), but it would seem to merit inclusion as one of particular significance.

The Compositae are believed by many taxonomists to have originated phylogenetically from umbellate ancestors (Collins, 1921; Bessey System, through the Rubiales, as in Core, 1955) by reduction and finally elimination of the pedicels of the umbels. The pedicellate condition of *Polymnia* disk florets supports the theory of the umbellate origin of the Compositae and substantiates the aptness of the term "reversion" for the type of morphological change exhibited in Figure 1. It also marks *Polymnia* with one of the most primitive characteristics in the Compositae.

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A "PILLAR"-TYPE BLACK SPRUCE.

While riding on Route 101-B in Candia, New Hampshire in Dec. 1967 I happened to see what looked like a black pillar or smoke stack in a swamp. Upon investigation the smoke pipe turned out to be a black spruce (*Picea mariana* (Mill) BSP.) about 6 in. in diameter and 35 ft. high with a tightly appressed green crown reaching to the ground. The branches were tightly thatched about the stem. There was no evidence of brooming caused by dwarf mistletoe. The crown was hardly wider than 18 in. at any point. About 10 feet southwest from this tree, (which stood alone, with no other trees of similar height closer than 50 feet) grew a black spruce with almost completely different branching habit. It was barely 5 feet high with a pyramidal crown spreading to a diameter of about 10 feet on the ground. It, too, was densely foliated. No cones were evident on either tree.

Black spruces with narrow or irregular crowns are common, but I have never seen one with such a narrow cylindrical crown. Mutants with crowns of this form have frequently been reported in *Picea abies* L., in fact I have found some myself in northern Sweden. This phenomenon has been discussed by Sylvén (1909), Rubner (1936) and H. Schmidt (1952) among others. Thus Wahlgren (1922) shows in Fig. 184 a "pillar" spruce from Grönsinka National Forest, Sweden and describes it (p. 477) "with short,